



**World Exchanges:  
Global Industry Outlook  
and Investment Analysis**

**NOVEMBER 2003**

**m**mondovisione

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## Executive Summary

## Industry definition

***An exchange is a regulated marketplace for buying and selling securities***

Securities exchanges are centralised markets where issuers raise capital and participants buy and sell securities. In essence, an exchange needs to offer four things:

1. A place (real or virtual) where buyers and sellers can meet.
2. The ability to capture pre- and post-trade information – and facilitate the widest possible dissemination of this information to all investors, efficiently and without discrimination.
3. Rules that are enforced, not so much as to stifle trade, but sufficient to provide reasonable protection for the naïve against the unscrupulous.
4. And finally, protection against counterparty risk.

## Historical evolution of exchange industry

***Exchanges have evolved from coffeehouse clubs to developed financial markets***

The evolution of the world's exchanges is a story of dynamic transformation. Despite often playing a significant role in the development of the modern economy, securities exchanges are very different now from what they were in the fourteenth century at the time of their inception.

The first publicly issued security can be traced to the medieval Italian port of Venice, which at the time served as an important trading route between Europe and Asia. By the seventeenth century, Amsterdam had taken over to become the world's leading financial centre with its own stock exchange, central bank and trading of quasi-financial derivatives. However, with the growth in the railroad industry, New York rapidly established itself as the largest financial centre in the world.

***A major development was the change from floor trading to electronic trading systems***

In 1971, the Nasdaq stock market began trading and became the first floorless exchange in the world through its multiple-dealer systems. Rapid advances in technology have led to cross-border trading and inter-exchange competition as well as regulatory reforms. The increased competition and globalisation of membership resulted in a spate of de-mutualisations in late the 1990s and early 2000s.

## Industry trends

***The change from physical face-to-face trading to a fully electronic trading system results in much reduced costs***

**Corporatisation, demutualisation and listing of exchanges:** In recent years, many exchanges have corporatised, demutualised and sought a public listing. In 2000, 78% of exchanges said that they had approved or were considering demutualisation<sup>1</sup>. The mutualised exchanges have historically tried to limit price competition and have maintained fixed commission charges. In contrast, the publicly listed non-member electronic exchanges have an incentive to reduce the access costs to their systems which intermediaries impose. In short, the demutualised exchanges should lead to lower capital costs for listed companies and lower trading costs for investors.<sup>2</sup>

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<sup>1</sup> Source: World Federation of Exchanges (WFE) ([www.world-exchanges.org](http://www.world-exchanges.org))

<sup>2</sup> Why do exchanges demutualise? Dr Benn Steil, André Meyer Senior Fellow in International Economics, Council on Foreign Relations

**ATs/ECNs have emerged as new players**

**The emergence of new players:** During the 1990s, in addition to the already established Instinet, a significant number of new players emerged – known as Alternative Trading Systems (ATs) or Electronic Communications Networks (ECNs). Substantial trading volume was attracted to these new players – for example over 30% of Nasdaq listed-stock volume in 2001 was on ECNs. We note that since the beginning of the bear market the number of ECNs has been shrinking as they fold or merge. Further, the established exchanges such as the NYSE are recapturing market share.

**Diversification:** In the US, cash (equities) and derivatives exchanges have remained largely separated. However, in Europe it is more common to see exchanges operating both cash equities trading operations and derivatives business.

**Automation:** The incumbents have been forced to invest substantial capital into new technologies as they have mostly moved from a floor-based trading environment. Substantial investment in the latest electronic trading systems continues unabated.

**Technology is the main driver of change**

**Falling costs:** The net effect of these trends can be seen in the financial statements of exchanges, as illustrated in the table below:

1990s global exchange industry trends – falling costs per trade	
Revenues – total industry increase	216%
Trading volume – total industry increase	476%
Implied fall in cost per trade	45%

Source: World Federation of Exchanges

## Industry drivers

### Network effects<sup>3</sup>

**Exchange competition is imperfect; however, centralised liquidity leads to positive network externalities and economies of scale**

We believe securities exchange competition is inherently imperfect. While we have seen a proliferation of new exchanges in recent years, there are significant benefits for participants (investors) in having access to a centralised pool of liquidity, thereby increasing the probability of achieving the best possible price. In terms of the combined costs of liquidity and exchange transactions costs, the latter make up on average only 9% of the total, with liquidity costs making up a full 91%<sup>4</sup>, hence the major importance of liquidity.

### Technology

**New technology brings better information and innovation**

**Technological developments:** The falling cost of data processing and telecommunications over the past couple of decades has had a far-reaching impact on the securities industry. This has made possible the growth of information services, electronic trading platforms, order-routing system and a plethora of new complex derivatives. Specifically, electronic trading has reduced the need for floor-based trading, and has enabled traders to be located anywhere they wish.

<sup>3</sup> A network effect is generally defined as a phenomenon whereby a service becomes more valuable as more people use it, thereby encouraging ever-increasing numbers of adopters. With exchanges, the more traders (hence volumes) there are the better the liquidity and the lower the spread between the bid and ask price.

<sup>4</sup> Source: Deutsche Börse Annual Report, 2001. Excludes other costs such as brokerage fees.

**Electronic trading eliminates the need for intermediaries and so reduces trading costs**

**Floor vs electronic trading and disintermediation<sup>5</sup>:** Technology has reduced the need for intermediaries by making the creation of ECNs possible. Significant explicit trading cost (brokerage commission) reductions may be achieved by reducing unnecessary intermediation. Total trading costs have been estimated to be 28-33% higher through NYSE and Nasdaq traditional broker members than through non-intermediated trading system operators such as ECNs<sup>6</sup>. Further, it is estimated that European trading fees alone would fall 70% if the European exchanges were to move to an ECN governance model: i.e. eliminating membership and allowing direct investor access.<sup>7</sup>

## Regulation

**Further regulatory harmonisation would also lower trading costs**

**Stock exchange perspective:** Stock exchanges must comply with expensive domestic regulatory requirements. Cross-border transactions typically 'have much higher clearance and settlement costs than wholly domestic transactions'<sup>8</sup>. Deutsche Börse and Clearstream (2002) estimate that 40% of the cost premium for cross-border transactions is from 'regulatory translation', resulting from differences in national law, taxes and corporate rules.

**Internalisation is cost-effective but leads to conflict of interest with brokers**

**The effects of internalisation – will regulators step in?** Internalisation is the process by which large broker-dealers operate their own trading desks, and settle trade orders they receive from clients in their own books. This makes trade execution services more competitive. However, the relative lack of transparency exposes them to potential 'conflict-of-interest' and 'best execution' issues.

**New regulation will enhance transparency and allow more trading venues**

**Regulation to enhance market information:** The latest European ISD regulation is pointing to areas of coming change. As regards pre-trade information, regulated markets will have to partially disclose their order book (if order driven) and their bid and ask quotes (if quote driven). Post-trade, regulated markets will have to publish prices, volumes and times of all equity trades at all times (with exceptions allowed for larger block trades).

Separately, while the earlier ISD allowed member states to mandate that all trading orders be routed to a regulated market, the new proposal allows broker-dealers to settle orders using alternative mechanisms (internally or using ATS/MTFs). Thus, it appears the concentration rule may be eliminated.

## Globalisation

**Companies are seeking access to global capital markets**

**Companies seeking foreign listings:** Exchanges regularly solicit companies outside their home territory and encourage them to list on their exchange. In fact, global competition has put pressure on corporations to seek capital outside their home country: a foreign listing raises the profile of the corporation and expands the potential investor base available to them. Exchanges have capitalised on this need and have aggressively marketed themselves globally.

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<sup>5</sup> Disintermediation: The removal of an intermediary, or middleman, from a transaction or communication. An example is the option for a business to sell its product directly to consumers as opposed to retailers. Another way to describe it is the elimination of intermediaries in the supply chain, also referred to as 'cutting out the middlemen'.

<sup>6</sup> Domowitz, Ian, and Benn Steil, 'Innovation in Equity Trading Systems: the Impact on Trading Costs and the Cost of Equity Capital', in Steil, Benn, David G Victor, and Richard R Nelson (eds.), Technological Innovation and Economic Performance, Princeton: Princeton University Press, 2002.

<sup>7</sup> *ibid*

<sup>8</sup> Steil, Benn, 'Building a Transatlantic Securities Market', published by the International Securities Market Association in cooperation with the Council on Foreign Relations, December 2002 (download at [www.isma.org](http://www.isma.org)).

For some this is an increasingly important revenue source as the exchanges themselves are competing globally with each other. The NYSE and LSE are among the most successful exchanges in attracting foreign companies.

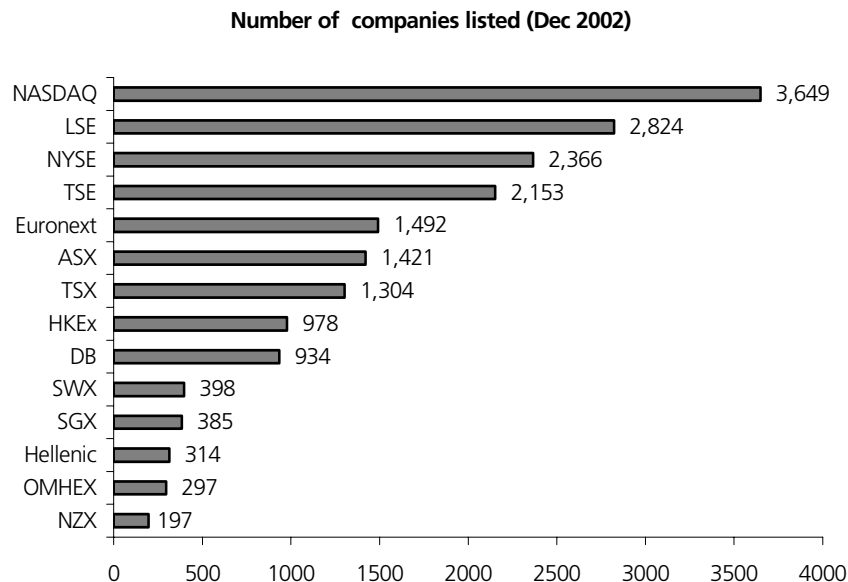
**Many exchanges are going global**

**Cross-border trading:** To increase the attractiveness of the exchange for investors and attract more volume, exchanges have more recently begun to offer cross-border trading. A prime example of this is the ASX, which in conjunction with Singapore Exchange (SGX) launched ASX WorldLink in 2001. This is an exchange-to-exchange cross-border trading link. The service provides seamless end-to-end trading, clearing and settlement for investors on the ASX and SGX markets. The system also offers a link into the US markets through NYSE, Nasdaq, and Amex.

## Competitive landscape

**Number of listed companies:** One useful measure of the competitive landscape is to compare exchanges by the number of companies listed. Our universe of sixteen<sup>9</sup> exchanges listed 18,500 companies at year-end 2002. The four largest exchanges on this count are Nasdaq, the LSE, the NYSE, and the TSE.

**Nasdaq has been very successful at attracting new companies**



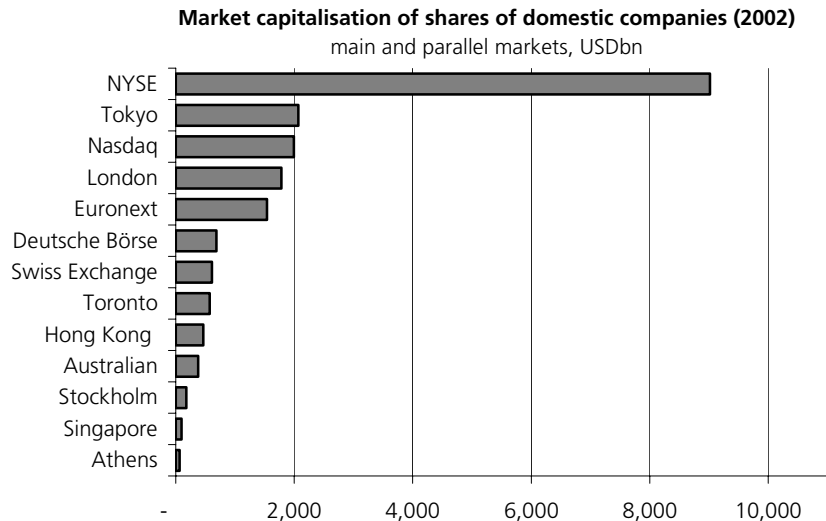
Source: World Federation of Exchanges

**Nasdaq and LSE are top in listings, but NYSE leads in market capitalisation**

**Market capitalisation of listed companies:** When we analyse market share in terms of the market capitalisation of listed companies we find a substantially different picture – while Nasdaq and the LSE may be the largest in terms of the number of listed companies, Nasdaq has a large number of smaller companies by capitalisation. In terms of capitalisation, the NYSE is by far the largest exchange in the world, with the TSE coming in a distant second with less than one quarter of the capitalisation of the NYSE.

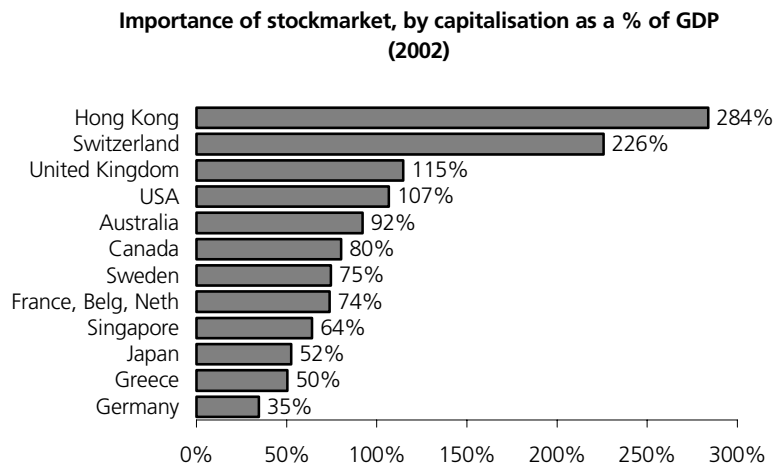
<sup>9</sup> Two of the sixteen exchanges trade derivatives only and do not list any equities.

**The capitalisation of NYSE companies is greater than the next seven exchanges combined**



Source: World Federation of Exchanges

**Germany's 35% reflects low valuations and a relatively underdeveloped equity market**

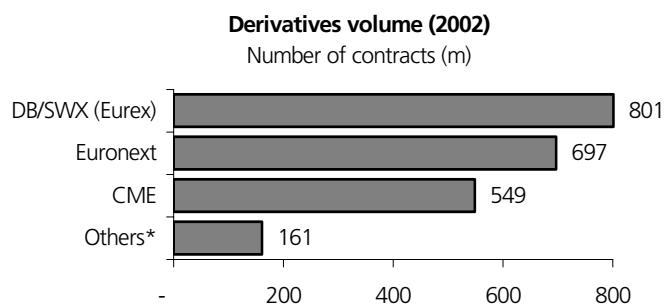


Source: World Federation of Exchanges, MV

### Derivatives markets by number of transactions

The derivatives leaders in our universe are clearly the CME, Euronext with Liffe, and DB/SWX (Eurex).

**Euronext is stronger in equities derivatives while DB/SWX is stronger in bonds**



\*Others = OM, SFE, SGX, ASX, TSE, HKEx

Source: Company data, MV

***ECNs are keeping the incumbent exchanges on their toes***

**The challenge of ECNs to US and European stock exchanges:** The merger of Instinet and Island in September 2002 and Archipelago's position as the first ECN-based national stock exchange (ArcaEx) represent a real threat to US stock exchanges. At present, ECNs hold approximately 33% of Nasdaq's trading volume. This figure could continue to rise if ECNs continue to consolidate and attract liquidity.

In Europe, the threat posed by ECNs is in our view limited given the structural differences compared with the US. European ECNs have struggled to make an impact on equity trading despite strong backing from major investment banks and financial intermediaries.

***Brokers are capturing order flows through internalisation***

**Continued competition from brokers:** Internalisation is in essence a process whereby major banks and brokerages co-ordinate the supply and demand of trade orders through the use of 'in-house' trading desks. This 'internalisation of order flow' diminishes the importance of stock exchanges, which in effect become a place to offload and rebalance inventory levels.<sup>10</sup> We expect internalisation to continue growing, particularly in the light of regulatory acceptance.

The issues brokers face regarding using member-exchanges are best explained by Ruben Lee in terms of divided loyalties: 'On the one hand, they benefit from the existence of the exchange by having a forum on which they are likely to be able to find a counterparty for any orders which they want executed. On the other hand, the more successful a member is in obtaining orders, the more likely it will be able to internalise the execution of these orders, and the more that the duties of being a member of the exchange become onerous.'<sup>11</sup>

## **Investment case**

***Despite the bear market, exchanges remain highly profitable, as reflected in their stock performance***

No matter how well they are managed, exchanges are still sensitive with respect to the direction of the market. One way to view exchanges is as a call on the next bull market, which should bring with it renewed IPO activity (growth in listings fees) and overall growth in trading volumes. But bull market or not, exchanges remain profitable in bear market conditions.

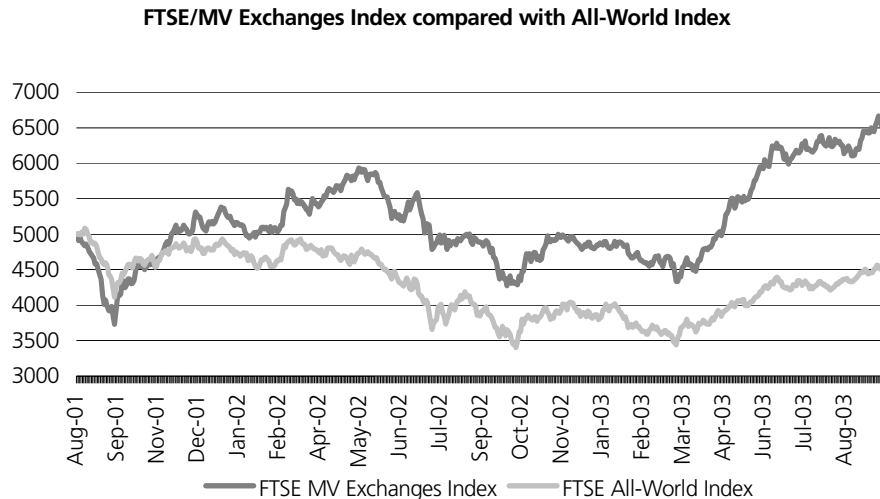
A comparison of the FTSE/MV Exchange Index since inception in August 2001 with the FTSE All-World Index shows the Exchange Index increased by 30.4% over the period while the World Index fell by 11.2%. Further, it appears exchanges will rise faster in a rising market (for example, between March 13, 2003 and September 25, 2003, the World Index rose 29.2% while the Exchange Index rose by 46.9%).

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<sup>10</sup> The issue of internalisation has been much debated and difficulties of regulating internalisation have been summarised by Mattias Levin of the CEPS and Tee Williams of Shriver Associates.

<sup>11</sup> Ruben Lee, 'What is an Exchange? The Automation, Management, and Regulation of Financial Markets', Ch. 4, 2000, Oxford University Press

**Since its inception the FTSE/MV Exchanges Index has increased by 30.4% while the FTSE All-World Index has decreased by 11.2%**



Source: FTSE/MV

## Revenues and costs

The revenue and cost drivers of stock exchanges include globalisation, technology and changes in legal status.

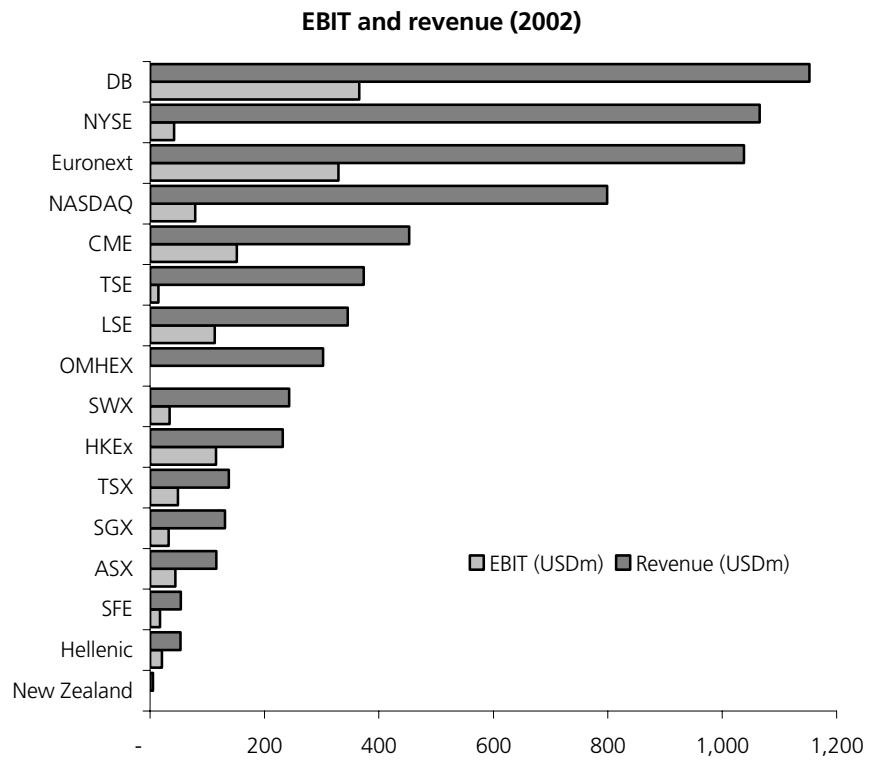
### Key recent global trends in revenues

1. According to the broad WFE survey<sup>12</sup>, the key source of overall revenues for the 56 exchanges surveyed was trading/transaction revenues (cash and derivative), which grew 64% over the period (1996-2001) from USD1.60bn to USD2.62bn. As a percentage of total revenue, trading revenue became more and more important over time from 36% in 1996 to 41% in 2001. The increase in trading revenue was in part thanks to the booming equity markets and the explosion of derivative trading.
2. The second most important revenue stream has been service revenues (clearing, settlement, information products and systems), which grew by USD0.73bn to USD2.07bn over the period 1996-2001. The growth in trading volume resulted in higher settlement and clearing revenues. The growth in information products and market data also contributed to the overall service revenue growth.

**Recent margin comparisons:** We note that DB, SFE, LSE and Euronext are all generating very healthy 30%+ EBIT (earnings before interest and taxes) margins, this during a bear market. We believe that in a rebound the profitability could prove outstanding, given the economies of scale inherent in the business model.

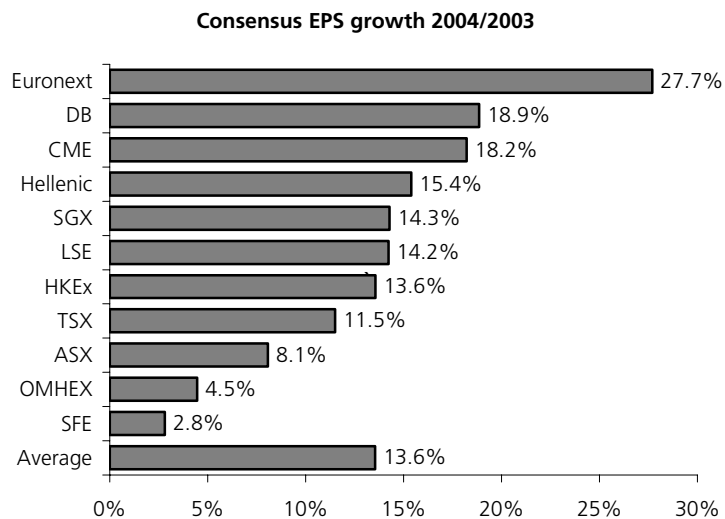
<sup>12</sup> Cost and Revenue Survey 2001 of 56 exchanges, conducted by World Federation of Exchanges

**Euronext and Deutsche Börse are generating substantial EBIT (earnings before interest and taxes)**



Source: Company data, MV

**EPS growth estimates:** Consensus analyst estimates clearly position Euronext, Deutsche Börse and the CME as the exchanges with the greatest future growth potential. If these estimates are accurate, stock prices should follow.



Source: I/B/E/S April 2003

**Valuation:** Based on consensus estimates, we expect an average price/earnings ratio of 15x for year-end 2003. The range is from 11.1 for the SFE to 18.1 for the ASX.

**P/E based valuations are surprisingly similar for the global exchanges group**

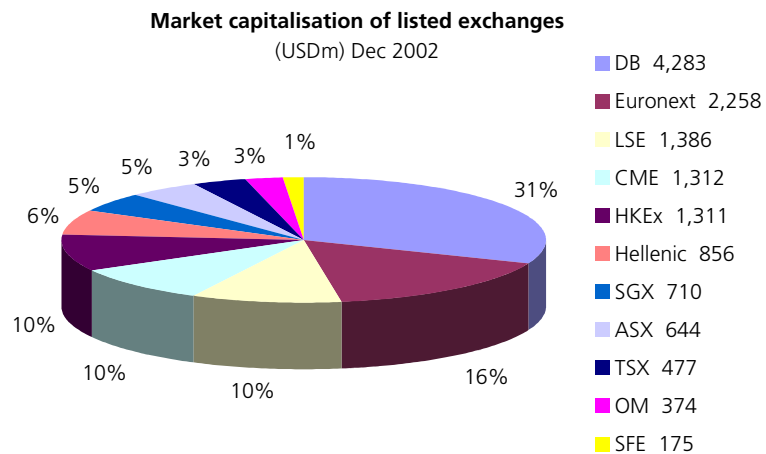
Consensus estimates	P/E 2003	P/E 2004
Euronext	14.4	11.2
DB	12.2	10.3
CME	13.9	11.8
Hellenic	17.6	15.3
SGX	17.7	15.5
LSE	13.9	12.2
HKEx	16.6	14.6
TSX	13.6	12.2
ASX	18.1	16.7
OM	15.6	14.9
SFE	11.1	10.8
Average	15.0	13.2

Note: P/E ests using Dec 31, 2002 USD share prices

Source: IB/E/S, MV

**Market capitalisation and ranking:** Our universe of listed exchanges is currently headed by Deutsche Börse, Euronext, the LSE and the CME

**The total capitalisation of our universe was USD13.8bn as of Dec 2002, with DB and Euronext making up nearly half of this value**



Source: MV

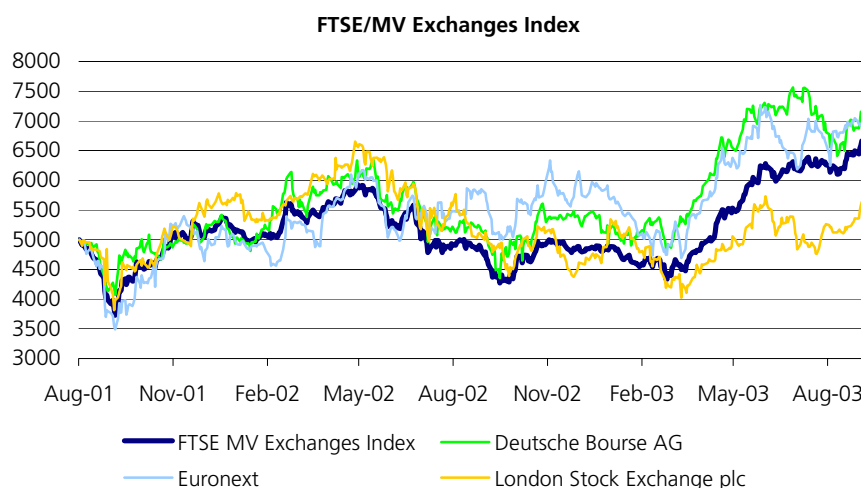
**Following the performance of the exchanges:** The FTSE/MV Exchange Index is the index we use to track the performance of the sector over time. This index currently represents 12 exchanges weighted by market capitalisation.

**This table shows the weight of each exchange in the Index, as of October 3, 2003**

	3/10/2003
Australian Stock Exchange Ltd	5.5%
Deutsche Börse AG	33.2%
Euronext	17.1%
Hellenic Exchanges SA	2.5%
Hong Kong Exchanges and Clearing Ltd	12.8%
London Stock Exchange plc	9.6%
OM AB	5.0%
SFE Corp	2.1%
Singapore Exchange Ltd	5.9%
TSX Group	3.5%
New Zealand Exchange Ltd	0.2%
Chicago Mercantile Exchange	2.6%

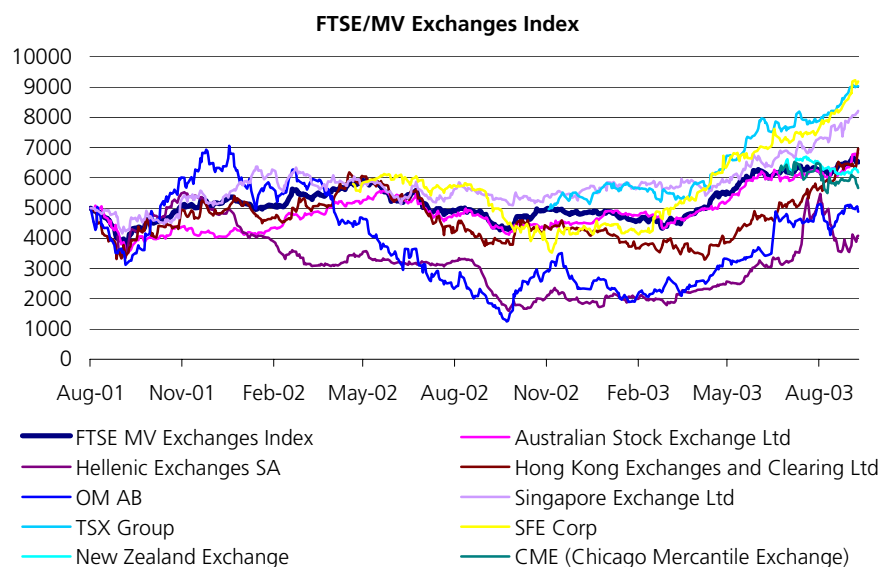
Source: FTSE/MV

**FTSE/MV Exchanges Index vs. the top three constituents which together account for almost 70% of the index market capitalisation**



Source: FTSE/MV

**This chart shows the performance of the remaining eight constituents against the FTSE/MV Exchanges Index...**

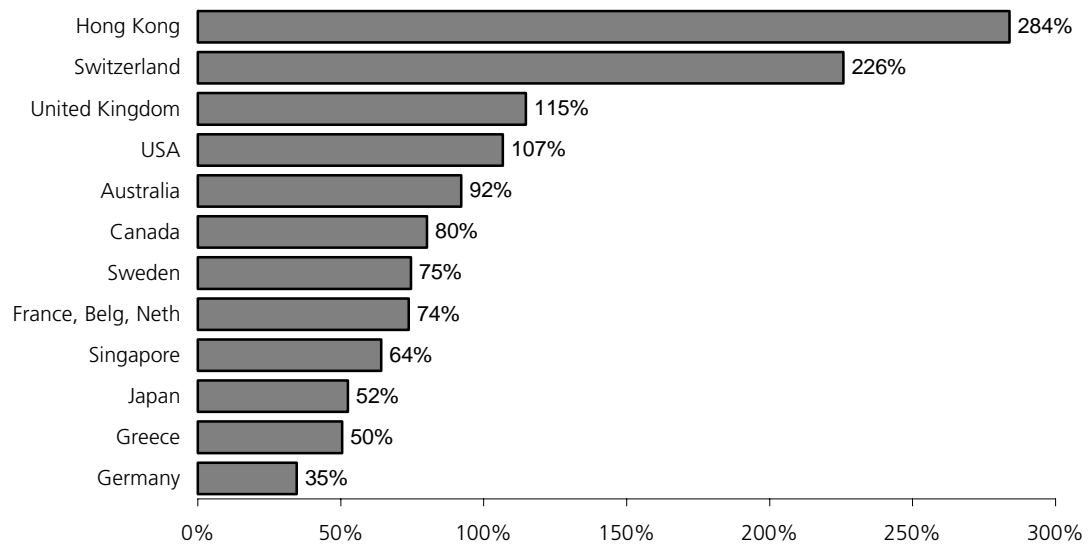


Source: FTSE/MV

**Conclusion:** Despite difficult market conditions with lower volumes traded, lower number of IPOs and increased competition, the sixteen global exchanges in our universe still achieved admirable average net returns of 18.8% in 2002. This is attributable to the diversification of revenue streams and the impact of cost reduction programmes implemented in prior years.

# Summary Analyses of Individual Exchanges

Importance of stock market, by capitalisation as a % of GDP 2002



# Chicago Mercantile Exchange

## *Making hay while the sun shines*

Price (USD) (at Sep 12 2003)	71.58
52-week range (USD)	
Market capitalisation (USDm)	2397.93
Shares outstanding (m)	33.5
Listed at	NYSE



## Highlights

1. Largest futures exchange in the USA and the second largest in the world (after Eurex), growing in excess of 20% annually over the last 15 years.
2. A long history of innovation, including pioneering financial futures contracts.
3. An attractive balance of multiple futures and options on futures products (stock indices, interest rates, commodities and currencies).
4. Global benchmark products like Eurodollar, S&P500 Index and Nasdaq-100 Index futures contracts.
5. CME's Eurodollar is the world's most traded short-term interest rate futures contract.
6. Owns two of the world's top five traded equity index futures, including E-mini S&P500 which had the largest trading volume in the world in 2002 among all equity index futures, with a growth of 194% over 2001.
7. Strong franchise in risk management products places it in a key position to derive benefit out of the prevailing economic and geopolitical uncertainty.
8. Listed in December 2002 – first publicly traded financial exchange in the USA.

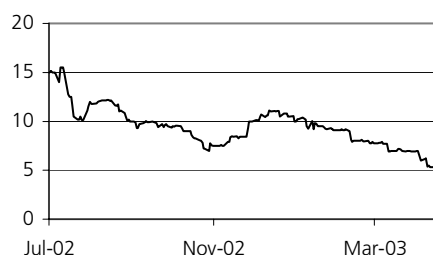
## Financial highlights

Year to December	2001	2002	2003E	2004E	2005E
Total revenue (USDm)	396.63	469.07	543.54	638.13	752.21
Net profit (USDm)	75.11	94.05	132.03	188.01	260.11
EBIT margins (%)	71.4	68.2	38.1	42.5	46.8
EPS (cents/share)	2.57	3.13	3.94	5.53	7.50
DPS (cents/share)	–	0.58	0.85	1.64	2.13

# Nasdaq Stock Market

## *Trailblazing rise, and then...*

Ticker symbol	NDAQ.OB
Market price (USD)	6.95
52-week range (USD)	15.5-5.25
Market capitalisation (USDm)	543.98
Shares outstanding (m)	78.27
Listed at	OTC bulletin board



## Highlights

1. The world's largest electronic stock market – a floorless electronic platform with open architecture, unlimited geographical reach, and very high speed of trade execution.
2. Regulatory delays, while constraining Nasdaq, have allowed competition to proliferate.
3. Nasdaq's market share of trading in its own listings, as well as the proportion of trades reported to it, are sliding continuously.
4. New management has introduced a marked change in strategy focused on regaining Nasdaq's predominant position among the US stock markets.
5. Areas critical to achieving the new strategy have been identified as: capturing a greater number of IPOs; drawing increased trade volume on its own platform; and attracting more listings from other exchanges.
6. Nasdaq is withdrawing from areas and products which do not form a part of its core business.
7. Nasdaq has abandoned its plans for an IPO.

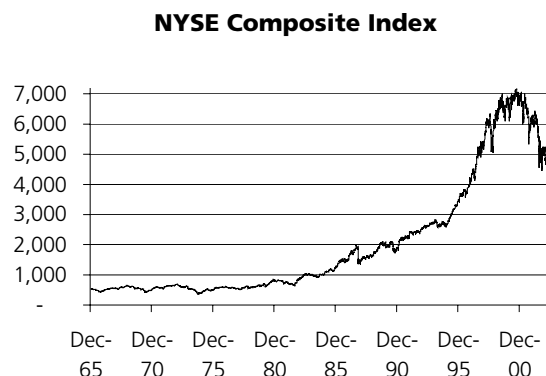
## Financial highlights

Year to December	2001	2002	2003E	2004E	2005E
Total revenues (USDm)	857.2	799.2	603.1	551.1	552.5
Net profit* (USDm)	40.5	43.1	(91.6)	(81.0)	(100.0)
No. of shares outstanding (m)	111.7	78.3	78.4	78.4	78.4
EBIT margin (%)	7.1	9.9	-17.7	-14.7	-18.1
EPS (USD)	0.36	0.43	(1.21)	(1.03)	(1.27)
* before Preference Dividend					

# New York Stock Exchange

## *The biggest of them all, but no longer the bluest*

Ticker symbol	NA
Market price	NA
52-week range	NA
Market capitalisation	NA
Shares outstanding	NA
Listed at	NA



## Highlights

1. Scandal after scandal; the future of the NYSE is now uncertain. The past few months have been tumultuous for the NYSE due the following issues:
  - a. Questionable practices of member (specialist) firms, which have been accused of trading ahead of clients – putting into question the very structure of the exchange.
  - b. Corporate governance, particularly regarding the composition of the board of directors who head firms that are regulated by the NYSE.
  - c. The level of compensation for former chairman Grasso, accumulating to USD188m –almost 7 years of net income at 2002 levels. The SEC is investigating and has questions regarding the NYSE’s governance structure.
2. The NYSE is still by far the largest exchange for cash equities – the 2,787 NYSE-listed companies’ have market capitalisation of over USD14.1tr (five times larger than the next largest exchange in the world).
3. Still the exchange of choice for blue chip companies? – a NYSE listing has traditionally suggested prestige and credibility for any US or foreign company. However, recent scandals are calling this into question. It might take the separation of the regulating side from the marketplace side of the NYSE to restore confidence.
4. The major success of the 1990s was NYSE’s ability to attract and retain over 473 foreign companies with a capitalisation of USD4.3tr. With NYSE’s credibility dented, we believe the level of new foreign listings will slow considerably as alternative exchanges such as Nasdaq are reconsidered.
5. Only lists established companies with stringent criteria on such areas as disclosure, cash flows and sales. The NYSE continues to set standards on this front.
6. Thus far has only been marginally affected by the advent of alternative trading systems, which are now estimated to have 20% of NYSE-listed stock volume.

## Financial highlights

Year to December USD 000	2001	2002	2003E	2004E	2005E
Total Revenues	1,114,005	1,065,859	1,077,453	1,073,566	1,069,811
EBIT	52,824	42,114	42,572	42,418	42,270
EBIT margin %	4.7%	4.0%	4.0%	4.0%	4.0%
Net income	31,791	28,063	24,192	24,104	24,020
Net margin %	2.9%	2.6%	2.2%	2.2%	2.2%

# TSX Group

## David among Goliaths

Ticker symbol	X
Market price (CAD)	30.85
52-week range (CAD)	31.25-19.10
Market capitalisation (CADm)	1041.19
Shares outstanding (m)	33.75
Listed at	Toronto Stock Exchange



## Highlights

1. First exchange in North America to be publicly listed.
2. Trading costs are the third lowest in the world due to the leading technology infrastructure and capabilities that it owns. Critical system availability also ranks among the highest globally. The benefit of a largely fixed cost structure, which offers the ability to produce operating leverage as business grows.
3. Has acquired and successfully integrated the Canadian venture equity platform (now renamed TSX Venture Exchange) and CanDeal, catering to the Canadian fixed income market, 13 times the size of the equity market.
4. Leading exchange in global mining with over 50% of the world's mining and exploration companies listed here.
5. Under an agreement with the Montreal Exchange, TSX group is barred from trading in derivatives until 2009. To enter the derivatives business, TSX would have to acquire an exchange abroad.
6. Does not have a presence in lucrative back-end businesses. Listing fees have been the largest contributor to the revenue mix.
7. Comfortable cash position would enable it to acquire other exchanges to protect existing business as well as to get into those areas where it does not have a presence. The reserves could also be utilised for a share buyback, increased dividends or a special dividend.

## Financial highlights

Year ended December	2001	2002	2003E	2004E	2005E
Total revenues (CADm)	180.0	215.9	217.6	225.9	234.5
Net profit (CADm)	30.2	53.8	53.4	55.60	58.8
No. of shares outstanding (m)	33.75	33.75	33.75	33.75	33.75
EBIT margin (%)	29.4	35.4	35.9	36.6	37.5
EPS (CAD)	0.89	1.59	1.58	1.65	1.74
DPS (CAD)		0.59	0.36*	0.50	0.50

\*Total quarterly dividends declared for the first two quarters of the current year

# Deutsche Börse

## *Will it dominate Europe?*

Ticker symbol	DB1X
Market price (EUR)	45.00
52-week range (EUR)	31.53-49.20
Market capitalisation (EURm)	5,031
Shares outstanding (m)	111.8
Listed at	Xetra, FWB



## Highlights

1. In addition to being a leading diversified derivatives and cash exchange, Deutsche Börse is also a leader in clearing, settlement and custodian services, and last but not least it is leveraging its solid IT platform and selling it to exchanges globally.
2. Highly levered to the next upturn in the market – the model allows for additional transactions revenue at minimal additional costs.
3. Innovative, bold management with proven track record. Continues to expand and diversify the Group, in what is typically a winner-takes-all market. Has a good chance of becoming Europe's dominant player by a wide margin.
4. Eurex US pre-launch marketing in full swing – but CFTC approval may delay start.

## Financial highlights

Year to December	2001	2002	2003E	2004E	2005E
Total revenues (EURm)	900	1,352	1,670	1,723	1,762
Net income (EURm)	203	235	289	327	349
Earnings per share (EUR)	2.04	2.18	2.58	2.92	3.12
Dividend yield (%)	0.7	0.9	1.2	1.4	1.7
Price/earnings		17.5	17.4	15.4	14.4
Price/book	2.8	1.9	2.3	2.3	2.3
End of period price	43.21	38.16	45.00	45.00	45.00
(Implied) market capitalisation (EURm)	4,311	4,107	5,031	5,031	5,031

# Euronext

## *The bourse of the future*

Market price (EUR)	16.34
52-week range (EUR)	24.75-15.80
Market capitalisation (EURm)	1999.28
Shares outstanding (m)	122.11
Listed at	Euronext



## Highlights

1. Total trading volume registered on Euronext during 2002 was the highest among all European exchanges. In terms of market capitalisation, Euronext was the second largest among European exchanges at year-end 2002, second only to the London Stock Exchange. Euronext is the largest European exchange in terms of value of trading conducted through its central order book.
2. With nearly 1,000 small and medium-sized companies listed on it, Euronext is the largest mid-cap stock exchange in the Eurozone. During recent months, the mid-cap sector has outperformed the large-cap sector.
3. Enables investors to trade in the equity markets of France, Holland, Belgium and Portugal. The potential for further cross-border trading and listings looks promising.
4. Diversity of business portfolio incomes will help the exchange overcome bearish phases of equity markets.
5. Offers a full netting service for all its markets and products, and also provides and integrates all the services needed by participants in the financial market place.
6. Owns systems widely regarded as state-of-the-art: NSC for trading cash products, LIFFE CONNECT for trading derivatives and Clearing 21 for clearing transactions.
7. Its digressive fee structure, which reflects the number of trades per member and not the value, will help to smooth the effect of market cycles on the exchange's revenue.
8. The major challenges of integration have been overcome. Due to this, the discounting given to the company's share is expected to go up.

## Financial highlights

Year to December	2001	2002	2003E	2004E	2005E
Total revenues (EURm)	697.90	996.55	1054.35	1104.06	1188.48
Net profit (EURm)	127.33	166.14	155.60	174.82	215.31
Shares outstanding (m)	106.00	122.11	122.11	122.11	122.11
EBIT margin (%)	16.9	23.9	29.7	31.3	34.5
EPS (EUR)	1.20	1.36	1.27	1.43	1.76
DPS (EUR)	0.35	0.45	0.45	0.45	0.50
2002: the first full year of operation after the IPO					

# London Stock Exchange

## *Buoyant amidst global adversity*

Price (GBP) (Sept. 26, 2003)	332.75
52-week range (GBP)	373.25 / 270
Market cap (GBPm)	991.54
Shares outstanding (m)	292.6
Listed at	London Stock Exchange



## Highlights

1. Fourth largest equities exchange in the world in terms of market capitalisation and second largest in terms of listings.
2. Major centre for international capital formation – 460 international companies listed.
3. Accounted for 69% of all Western European IPOs in FY03, with AIM – LSE’s alternative market for growing companies – alone accounting for around 46%.
4. Despite global bear run, 8% growth achieved in FY03 trading volumes through continued rapid increase in electronic order book trading.
5. Various new products and service offerings being introduced to diversify existing revenue streams.
6. Focus on technology and information infrastructure.
7. Entry into derivatives through introduction of covered warrants in October 2002, followed by 76% ownership in EDX London, a new derivatives exchange launched jointly with OM Gruppen AB.
8. Improving operating margins – up from 26.8% in FY00 to 34.4% in FY03.

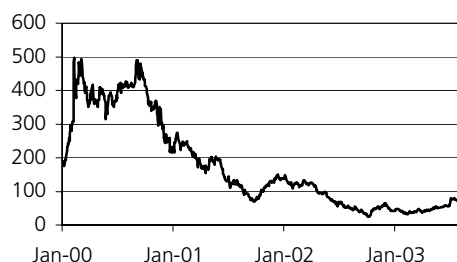
## Financial highlights

Year to March	2001	2002	2003	2004E	2005E	2006E
Total revenue (GBPm)	194.6	215.6	237.3	252.5	264.8	285.6
Net profit (GBPm)	15.2	49.9	52.7	80.9	74.1	80.6
EBIT margins (%)	30.2	32.7	34.4	40.1	40.0	40.3
EPS (pence)	51.2	17.0	17.9	27.4	25.1	27.3

# OMHEX

## *Delivering on Nordic consolidation*

Price (SEK) (Sept 12, 03)	83.50 SEK
52-week range (SEK)	49.80/32.10
Market cap (SEKm)	7,017
Shares outstanding (m)	80.0
Listed at	Stockholmsbörsen



## Highlights

1. The merger between OM and Hex is moving OM away from technology and toward the strategy of consolidating the Scandinavian exchange market.
2. Bold, aggressive management continues to exercise financial discipline and take tough decisions. OM implemented a restructuring program during Q2-2003 which the company estimates will lower costs by SEK578 m, while resulting in a drop in revenues of SEK105 m on an annual basis.
3. In terms of sales, OM has been 2/3 an IT consulting company to other exchanges and brokers, and 1/3 an exchange. As OMHEX, the company revenues will be roughly split 50/50 exchange/IT, but in terms of operating earnings, the exchange business will likely continue being the one generating most of the cash.
4. Runs Stockholmsbörsen and the Helsinki exchanges, the leading exchanges in Northern Europe – this part of the business is world-class and can achieve high operating margins of 30%-50%.
5. Trends in trading are weaker than expected.
6. With a gradual recovery of the global economies and parallel rising stock markets, OM should benefit from stable to growing trading volumes with the possibility of increased exchange technology spending in a recovering investment cycle.
7. This has been a great stock to own into the recent global stock market recovery. However, much of the upside from the merger and technology restructuring has now been priced into the stock.

## Financial highlights

Year to December	2001	2002	2003E	2004E	2005E
Net sales (SEKm)	3,072	2,560	2,302	2,461	2,510
Net income (SEKm)	(25)	(151)	(460)	141	178
Shares outstanding (m)	84.8	84.8	84.0	84.0	84.0
EBIT margin (%)	-14.7%	-4.1%	-22.1%	8.3%	10.1%
EPS (SEK)	(0.29)	(1.78)	(5.48)	1.68	2.11
DPS (SEK)	5.94	1.00	1.00	1.00	1.00

# Hellenic Exchanges

## *In rough seas*

Price (EUR) (as on Sept. 17, 2003)	4.64
52-week range (EUR)	6.76/2.33
Market cap (EURm)	329
Shares outstanding (m)	71.08
Listed at	ASE



## Highlights

1. Holding company with a number of subsidiaries which operate the entire capital market in Greece.
2. Revenues largely dependent on level of cash trading activity.
3. Earnings affected adversely by depressed stock market conditions.
4. Low operating margins in spite of decrease in operating costs.
5. Focus on market consolidation in South Eastern Europe and promotion of investment activity in emerging markets.
6. Operates entire cash and derivatives trading on electronic screen-based trading system OASIS.
7. OASIS is already installed in Belgrade Stock Exchange and will be installed in Montenegro Stock Exchange.

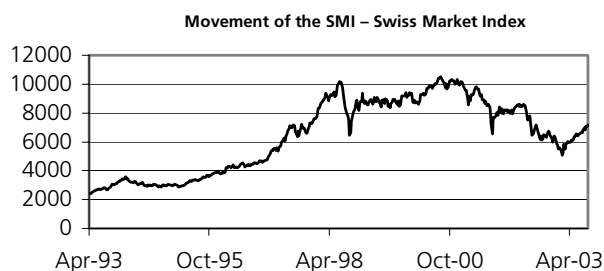
## Financial highlights

Year to December	2001*	2002	2003E	2004E	2005E
Total revenues (EURm)	79.34	51.48	54.36	57.94	63.91
Net profit (EURm)	25.58	(20.21)	7.28	7.69	9.80
Shares outstanding (m)	58.25	71.08	71.08	71.08	71.08
EBIT margin (%)	26.5	1.5	5.6	9.1	15.1
EPS (EUR)	0.09	(0.06)	0.10	0.11	0.14

# SWX Group

## A group to watch

Price	NA
52-week range	NA
Market cap	NA
Shares outstanding	NA
Listed at	NA



## Highlights

1. Has a presence in every area related to securities and derivatives trading through its subsidiaries. Revenues are derived from varied business streams, imparting a degree of stability.
2. Eurex, the derivatives trading joint venture with Deutsche Börse, has been achieving record volumes – a 19% increase in trading volume during 2002, after a 50% rise during 2001.
3. Eurex is registering new records in trading volume during the current year: revenues during the second quarter have risen 41% when compared to those in the second quarter of 2002, while the corresponding operating profit has more than doubled.
4. Revenue from Eurex will be the key driver of growth at the SWX Group.

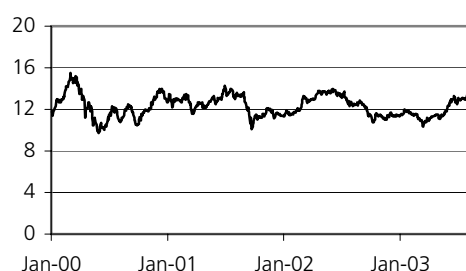
## Financial highlights

Year to December	2000	2001	2002	2003E	2004E	2005E
Total revenues (CHFm)	251.2	329.0	339.4	381.4	414.3	458.8
Net profit (CHFm)	6.3	101.8	41.4	67.4	89.6	120.0
Shares outstanding (m)	NA	NA	1.00	1.00	1.00	1.00
EBIT margin in %	12.2	20.7	14.1	23.2	28.5	34.6
EPS (CHF)	NA	NA	41.4	67.4	89.6	120.0

# Australian Stock Exchange

## ***Dominant regional player***

Price (AUD) (at Sep 12 2003)	13.56
52-week range (AUD)	
Market cap (AUDm)	1381.76
Shares outstanding (m)	101.9
Listed at	ASX



## **Highlights**

1. The Australian Stock Exchange (ASX) is the dominant exchange in the Australian stock market, which has outperformed world markets on the back of higher investments in equity by the general population.
2. Substantial cash generation has led to high cash reserve ratio. Since its listing five years ago, ASX has also been maintaining a high dividend pay-out ratio.
3. Prudent capital management and stringent focus on development of further efficiencies out of the existing system has paid off in terms of lower maintenance charges and consequently lower capital expenditure.
4. The recent fee re-structuring for the various services provided has yielded substantial cash generation for the exchange.
5. The world's first fully electronic stock market has focused on improving efficiency through investment in technology.
6. Diversification into futures trading (electricity and property) and now agricultural products will only add further to the revenue stream and also protect the Exchange from any downside risks of the equity market.

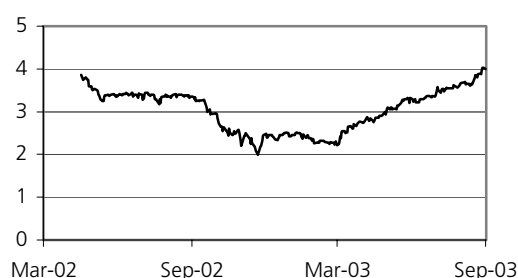
## **Financial highlights**

<b>Year to June</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004E</b>	<b>2005E</b>	<b>2006E</b>
Total revenue (AUD)	192	205	206.81	218.82	232.21	247.12
Net profit (AUD)	51	59	57.75	68.56	77.08	86.51
EBIT margins (%)	37	38	35	40	43	45
EPS (cents/share)	50.29	58.35	56.67	66.86	74.91	83.99
DPS (cents/share)	43.30	40.60	67	50	60	70

# SFE Corporation

## Looking outwards

Price (AUD) (at Sep 12 2003)	4.10
52-week range (AUD)	4.15/1.95
Market capitalisation (AUDm)	537.31
Shares outstanding (m)	131.05
Listed at	ASX



## Highlights

1. Ranked tenth in the world and second in the Asia-Pacific region among financial futures and options exchanges, on 2002 trading volumes.
2. Major benchmark products in interest rate and equity index futures contracts.
3. Has own clearing house – merger with Austraclear offers customers a complete clearing service covering both exchange-traded derivatives as well as OTC securities through to cash transfers, depository and custodial services.
4. First exchange in the world to offer after-hours trading facility – 20% of trading volumes in 2002 came from overnight trades.
5. Accessibility and global product distribution via an open architecture trading interface and a network of communications hubs in major financial centres.
6. Major products approved for trading by the US Commodities Futures Trading Commission (CFTC) and the UK Financial Services Authority (FSA).
7. High operating margins (EBIT 41.5% in 2002 and rising over the last 3 years) as a result of tight control over expenses.

## Financial highlights

Year to December	2001	2002	2003E	2004E	2005E
Total revenue (AUDm)	89.43	95.18	98.76	106.47	110.99
Net profit (AUDm)	21.43	26.80	31.74	33.70	34.44
EBIT margins (%)	35.3	41.5	45.9	45.2	44.3
EPS (cents/share)	15.9	20.59	24.22	25.72	26.28
DPS (cents/share)	12	15.40	16.96	18.00	18.40

# Singapore Exchange

## *The innovator in Asia*

Ticker	SGXL.SI
Market price (SGD)	1.22
52-week range (SGD)	1.42-1.10
Market capitalisation (SGDm)	1220.87
Shares outstanding (m)	1000.71
Listed at	Singapore Exchange



## Highlights

1. The first listed exchange in Asia, and the first demutualised and vertically integrated exchange in the Asia-Pacific region.
2. The SGX share is a component of benchmark indices such as the MSCI Singapore Free Index and the Straits Times Index.
3. The best derivatives exchange in Asia. Current market conditions have given rise to a great deal of volatility. Consequently, futures trading on the derivatives market of the Exchange soared to record highs, with new records being set every month in certain derivatives contracts.
4. The stock has given a high dividend yield of about 6% during FY 2002 proposed during the current year. It is likely to maintain such yields in future due to its comfortable cash reserves.
5. Innovative management, responsive to changing market needs.
6. Diversified earnings streams: trading, clearing and settlement in both securities and derivatives, and securities depository. Possesses technologically advanced systems.

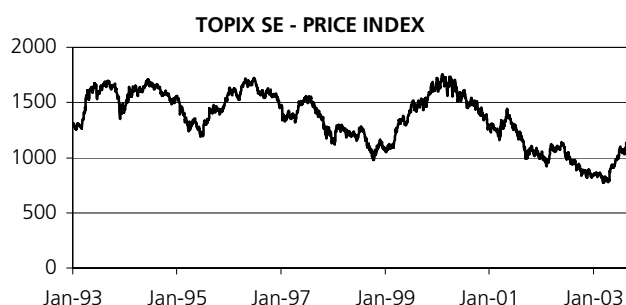
## Financial highlights

Year to June	2001	2002	2003	2004E	2005E
Total revenues (SGDm)	217.0	228.7	218.5	234.5	253.9
Net profit (SGDm)	49.1	58.5	12.8	69.4	79.3
No. of shares outstanding (m)	1000	1000	1001	1001	1001
EBIT margin (%)	33.3	25.0	23.8	26.5	29.9
EPS (SGD)	0.049	0.059	0.013	0.069	0.079
DPS (SGD)	0.03	0.07	0.41	0.07	0.10

# Tokyo Stock Exchange

## *A bourse with a past ... and a future*

Price	NA
52-week range	NA
Capital	JPY11.5bn
Shares outstanding	2.3m
Listed at	NA



## Highlights

1. The second largest stock market in the world in terms of total market capitalisation – but against the background of a weak Japanese economy.
2. The Tokyo Stock Exchange stock is slated for listing during year ending March 2006.
3. Operating margins are expected to expand due to aggressive cost-cutting undertaken by the management.

## Financial highlights

Year to March	2001*	2002	2003	2004E	2005E
Total revenues (JPYbn)	43.6	45.7	41.1	42.4	44.1
Net profit (JPYbn)	NA**	0.8	2.5	5.4	7.5
No. of shares (m)	NA**	2.3	2.3	2.3	2.3
EBIT margin (%)	NA**	3.9	6.0	11.3	15.7
EPS (JPY)	NA**	366.1	1078.7	2356.2	3278.4
DPS (JPY)***	NA**	0.0	0.0	0.0	0.0

\*Not comparable to later years due to difference in method of accounting.

\*\*Not applicable as the Exchange was a not-for-profit corporation and hence returned surplus to members.

\*\*\*To build up reserves in a run-up to its listing, TSE proposes not to pay dividends.

# Hong Kong Exchanges and Clearing

## *Uncertainty ahead*

Price (HKD)(at Sept 15, 2003)	15.50
52-week range (HKD)	8.30/15.75
Market cap (HKDm)	16175
Shares outstanding (m)	1043.58
Listed at	HKEx



## Highlights

1. Monopoly on stock market operations in Hong Kong.
2. Ranked tenth in the world and second in Asia in terms of market capitalisation.
3. Major international financial centre for capital formation – in a key position to benefit from growth in mainland China economy. Primary venue for many mainland companies for equity financing.
4. Integrated stock exchange, derivatives exchange and clearing and settlement operations.
5. Wide range of products traded on electronic trading systems.
6. Diversified revenue base, but revenues on the decline due to depressed market conditions. Listing fees have increased in the past but could be affected in future by recent Government announcement on changes in regulatory system.
7. Expenses kept under control – staff costs reduced in two successive years.

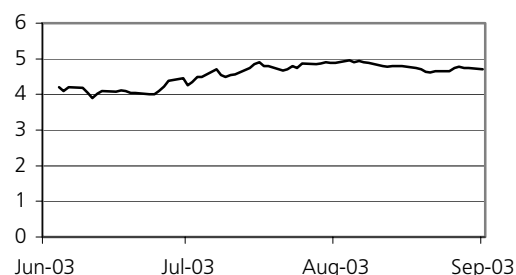
## Financial highlights

Year to December	2001	2002	2003E	2004E	2005E
Total revenue (HKDm)	1998.81	1808.09	1788.69	1895.94	2011.07
Net profit (HKDm)	740.24	592.96	435.30	542.008	596.488
EBT margins (%)	41.1	35.9	29.5	34.7	36.0
EPS (HKD)	0.71	0.57	0.42	0.52	0.43
DPS (HKD)	0.33	0.51	0.33	0.39	0.43

# New Zealand Exchange

## *Too small for comfort*

Price (NZD) (at Sep 23 2003)	4.54
52-week range (NZD)	N/A
Market capitalisation (NZDm)	57.59
Shares outstanding (m)	12.685
Listed at	NZX



## Highlights

1. Only registered stock exchange in New Zealand.
2. Demutualised in December 2002 and listed in June 2003.
3. Fully automated screen-based trading systems. The exchange developed the FASTER technology platform – consisting of FASTER trading and FASTER settlement and registration on a real time, fully electronic basis.
4. Growth initiative includes setting up of NZAX, for small and medium sized companies to raise capital and list on the exchange.
5. Developed Market Announcement Platform (MAP), a fully electronic, template-based announcement platform.
6. Agreed a deal recently with SFE Corporation for the listing and trading of New Zealand equity derivative products on the Sydney Futures Exchange.
7. Both the number of listed securities and trading volumes are low, reflecting low investor interest in New Zealand.
8. Low operating margins – down to 3.3% in FY02.

## Financial highlights

Year to	Jun 01	Jun 02	Dec03E	Dec04E	Dec05E
Total revenue (NZDm)	9.34	10.28	11.50	12.90	14.60
Net profit (NZDm)	0.75	(0.52)	0.08	0.53	0.99
EBIT margins (%)	13.7	3.3	5.2	6.2	10.1
EPS (cents/share)	-	-	0.01	0.04	0.08
DPS (cents/share)	0	0	0	0	0